IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A data processing method for determining record data allocation on an information recording medium having a plurality of recording layers, the method comprising:

an allowable jump range determining step of determining, in [[the]] a decoding unit, an allowable range of an intra-layer jump and an inter-layer jump performed in a playback processing of said information recording medium, the allowable range of the inter-layer jump being no more than 40,000 sectors, and the allowable range of the intra-layer jump being 1/10-stroke, a full stroke being equivalent to a range from an innermost side to an outermost side of the recording medium, and the 40,000 sectors being greater than the 1/10-stroke;

a required jump time calculating step of calculating, in the decoding unit, a required time for the intra-layer jump and the inter-layer jump on the basis of allowable jump range information determined in said allowable jump range determining step; and

a consecutive data allocation size determining step of determining, in the decoding unit, an allowable minimum consecutive data size of data to be stored in the information recording medium on the basis of the required jump time calculated in said required jump time calculating step.

Claim 2 (Previously Presented): The data processing method as claimed in Claim 1, wherein:

said required jump time calculation step is a step of calculating:

as to an intra-layer jump, a sum of a seek time of a pickup and an overhead time involved in a processing for a read data unit block of the information recording medium, and

as to an inter-layer jump, a sum of the seek time of the pickup, a pickup adjustment time involved in an inter-layer seek, and an overhead time involved in a processing for a read data unit block of said information recording medium.

Claim 3 (Previously Presented): The data processing method as claimed in Claim 1, wherein:

said consecutive data allocation size determining step is a step including an allowable minimum playback time determining step of determining an allowable minimum playback time as a playback time corresponding to the allowable minimum consecutive data size of the data to be stored in the information recording medium, and determining the allowable minimum consecutive data size of the data to be stored in the information recording medium on the basis of said allowable minimum playback time.

Claim 4 (Previously Presented): The data processing method as claimed in Claim 3, wherein:

said allowable minimum playback time determining step is a step of calculating the allowable minimum playback time [t] on the basis of a jump time [TJUMP], a data read out rate [Rud] from a disc in a drive and a data recording rate [RTS] in accordance with the following equation:

$t = TJUMP \times Rud/(Rud-RTS)$; and

said consecutive data allocation size determining step is a step of determining the allowable minimum consecutive data size of the data to be stored in the information recording medium on the basis of the allowable minimum playback time [t] calculated by said equation in accordance with the following equation:

$Usize = t \times RTS$.

Claim 5 (Previously Presented): The data processing method as claimed in Claim 1, further comprising:

a data setting processing step of identifying jump origin data and jump destination data that can be generated in the playback processing of the stored data in the information recording medium and setting a distance between the jump origin data and the jump destination data within the allowable jump range determined in said allowable jump range determining step.

Claim 6 (Previously Presented): The data processing method as claimed in Claim 5, wherein:

said data setting processing step carries out a processing of setting the distance between the jump origin data and the jump destination data within said allowable jump range by an interleave processing of clip data set as a data unit of storage target data on the information recording medium.

Claim 7 (Previously Presented): The data processing method as claimed in Claim 1, further comprising:

a data recording step of performing data recording on the information recording medium in a data unit larger than or equal to the consecutive data allocation size determined in said consecutive data allocation size determining step.

Claim 8 (Currently Amended): A data processing apparatus for determining record data allocation on an information recording medium having a plurality of recording layers, said apparatus comprising:

allowable jump range determining means that determines an allowable range of an intra-layer jump and an inter-layer jump performed in a playback processing of said information recording medium, the allowable range of the inter-layer jump being no more than 40,000 sectors, and the allowable range of the intra-layer jump being 1/10-stroke, a full stroke being equivalent to a range from an innermost side to an outermost side of the recording medium, and the 40,000 sectors being greater than the 1/10-stroke;

required jump time calculating means that calculates a required time for the intra-layer jump and the inter-layer jump on the basis of allowable jump range information determined by said allowable jump range determining means; and

consecutive data allocation size determining means that determines an allowable minimum consecutive data size of data to be stored in the information recording medium on the basis of the required jump time calculated by said required jump time calculating means.

Claim 9 (Previously Presented): The data processing apparatus as claimed in Claim 8, wherein:

said required jump time calculating means calculates:

as to an intra-layer jump, a sum of a seek time of a pickup and an overhead time involved in a processing for a read out data unit block of the information recording medium, and

as to an inter-layer jump, a sum of the seek time of the pickup, a pickup adjustment time involved in an inter-layer seek, and an overhead time involved in a processing for a read out data unit block of said information recording medium.

Claim 10 (Previously Presented): The data processing apparatus as claimed in Claim 8, wherein:

said data processing apparatus further includes allowable minimum playback time determining means that determines an allowable minimum playback time as a playback time corresponding to the allowable minimum consecutive data size of the data to be stored in the information recording medium, and

said consecutive data allocation size determining means is configured to determine the allowable minimum consecutive data size of the data to be stored in the information recording medium on the basis of said allowable minimum playback time.

Claim 11 (Previously Presented): The data processing apparatus as claimed in Claim 10, wherein:

said allowable minimum playback time determining means is configured to calculate the allowable minimum playback time [t] on the basis of a jump time [TJUMP], a data read out rate [Rud] from a disc in a drive and a data recording rate [RTS] in accordance with the following equation:

$t = TJUMP \times Rud/(Rud-RTS)$; and

said consecutive data allocation size determining means is configured to determine the allowable minimum consecutive data size of the data to be stored in the information recording medium on the basis of the allowable minimum playback time [t] calculated by said equation in accordance with the following equation:

$Usize = t \times RTS$.

Claim 12 (Previously Presented): The data processing apparatus as claimed in Claim 8, wherein:

said data processing apparatus further has data setting processing means that identifies jump origin data and jump destination data that can be generated in the playback processing

of the stored data in the information recording medium and sets a distance between the jump origin data and the jump destination data within the allowable jump range determined in the said allowable jump range determining means.

Claim 13 (Previously Presented): The data processing apparatus as claimed in Claim 12, wherein:

said data setting processing means is configured to carry out a processing of setting the distance between the jump origin data and the jump destination data within said allowable jump range by an interleave processing of clip data set as a data unit of storage target data on the information recording medium.

Claim 14 (Previously Presented): The data processing apparatus as claimed in Claim 8, wherein:

said data processing apparatus further has data recording means that performs data recording on the information recording medium in a data unit larger than or equal to the consecutive data allocation size determined in said consecutive data allocation size determining step.

Claim 15 (Previously Presented): An information recording medium having a plurality of recording layers, comprising:

a configuration storing therein data larger than or equal to an allowable minimum consecutive data size determined on the basis of a required jump time of an intra-layer jump and an inter-layer jump executed in a playback processing of the information recording medium, the allowable range of the inter-layer jump being no more than 40,000 sectors.

Claim 16 (Previously Presented): The information recording medium as claimed in Claim 15, wherein:

said required jump time is:

as to an intra-layer jump, a sum of a seek time of a pickup and an overhead time involved in a processing for a read out data unit block of the information recording medium, and

as to an inter-layer jump, a sum of the seek time of the pickup, a pickup adjustment time involved in an inter-layer seek, and an overhead time involved in a processing for a read out data unit block of said information recording medium.

Claim 17 (Previously Presented): The information recording medium as claimed in Claim 15, wherein:

said allowable minimum consecutive data is a size determined on the basis of an allowable minimum playback time as a playback time corresponding the allowable minimum consecutive data size of the data to be stored in the information recording medium.

Claim 18 (Previously Presented): The information recording medium as claimed in Claim 15, wherein:

said information recording medium further has data allocation of setting a distance between jump origin data and jump destination data in a jump processing that can be generated in a playback processing of the stored data of the information recording medium within an allowable jump range.

Claim 19 (Previously Presented): The information recording medium as claimed in Claim 18, wherein:

said information recording medium further has data allocation in which the distance between the jump origin data and the jump destination data is set within said allowable jump range by an interleave processing of clip data set as a data unit of storage target data on the information recording medium.

Claim 20 (Currently Amended): A computer readable medium including computer executable instructions for executing a data processing for determining record data allocation on an information recording medium having a plurality of recording layers, said computer executable instructions causing a computer to execute:

an allowable jump range determining step of determining an allowable range of an intra-layer jump and an inter-layer jump performed in a playback processing of said information recording medium, the allowable range of the inter-layer jump being no more than 40,000 sectors, and the allowable range of the intra-layer jump being 1/10-stroke, a full stroke being equivalent to a range from an innermost side to an outermost side of the recording medium, and the 40,000 sectors being greater than the 1/10-stroke;

a required jump time calculating step of calculating a required time for the intra-layer jump and the inter-layer jump on the basis of allowable jump range information determined in said allowable jump range determining step; and

a consecutive data allocation size determining step of determining an allowable minimum consecutive data size of data to be stored in the information recording medium on the basis of the required jump time calculated in said required jump time calculating step.

Claim 21 (Currently Amended): A data processing method for determining record data allocation on an information recording medium, said method comprising:

a data size determining step of determining, in [[the]] a decoding unit, a data size as a minimum size of data to be stored in the information recording medium on the basis of allowable jump range information determined as an allowable range of at least an inter-layer jump processing in a playback processing of said information recording medium, the allowable range of the inter-layer jump being no more than 40,000 sectors, and the allowable range of the intra-layer jump being 1/10-stroke, a full stroke being equivalent to a range from an innermost side to an outermost side of the recording medium, and the 40,000 sectors being greater than the 1/10-stroke; and

a data allocation determining step of determining, in the decoding unit, a data recording configuration in which a data block having said data size is so allocated as to be playable in the jump processing within said allowable jump range.

Claim 22 (Previously Presented): The data processing method as claimed in Claim 21, wherein:

said data size determining step is a step of determining a data size as a minimum size of data to be stored in the information recording medium on the basis of the allowable jump range information of an intra-layer jump and an inter-layer jump.

Claim 23 (Previously Presented): The data processing method as claimed in Claim 21, wherein:

said data size determining step is a step of determining a data size on the basis of a table in which a data recording rate [RTS] is made corresponding to the allowable minimum data size of the data to be stored in the information recording medium.

Claim 24 (Previously Presented): The data processing method as claimed in Claim 21, wherein:

said data size determining step is a step of determining a data size on the basis of a relational expression between a data recording rate [RTS] and the allowable minimum data size of the data to be stored in the information recording medium.

Claim 25 (Previously Presented): The data processing method as claimed in Claim 24, wherein:

said relational expression is an expression shown by the following equation:

$$S_{EXTENT}[byte] \geq \frac{T_{JUMP}[ms] \times R_{UD}[bps]}{1000 \times 8} \times \frac{TS\_recording\_rate[bps] \times 192}{R_{UD}[bps] \times 188 - TS\_recording\_rate[bps] \times 192},$$

setting that an allowable minimum data size of the data to be stored in the information recording medium is S_{EXTENT}, a total jump time is T_{JUMP}, a data read out rate from a disc in a drive is R_{ud}, and a data recording rate [RTS] is $TS_{recording\ rate}$.

Claim 26 (Currently Amended): A data processing apparatus for determining record data allocation on an information recording medium, said apparatus comprising:

a data size determining apparatus that determines a data size as a minimum size of data to be stored in the information recording medium on the basis of allowable jump range information determined as an allowable range of at least an inter-layer jump processing in a playback processing of said information recording medium, the allowable range of the inter-layer jump being no more than 40,000 sectors, and the allowable range of the intra-layer jump being 1/10-stroke, a full stroke being equivalent to a range from an innermost side to an

outermost side of the recording medium, and the 40,000 sectors being greater than the 1/10-stroke; and

a data allocation determining apparatus that determines a data recording structure in which a data block having said data size is so allocated as to be playable in the jump processing within said allowable jump range.

Claim 27 (Previously Presented): The data processing apparatus as claimed in Claim 26, wherein:

said data size determining means is configured to determine a data size as a minimum size of data to be stored in the information recording medium on the basis of the allowable jump range information of an intra-layer jump and an inter-layer jump.

Claim 28 (Previously Presented): The data processing apparatus as claimed in Claim 26, wherein:

said data size determining apparatus is configured to determine a data size on the basis of a table in which a data recording rate [RTS] is made corresponding to the allowable minimum data size of the data to be stored in the information recording medium.

Claim 29 (Previously Presented): The data processing apparatus as claimed in Claim 26, wherein:

said data size determining apparatus is configured to determine a data size on the basis of a relational expression between a data recording rate [RTS] and the allowable minimum data size of the data to be stored in the information recording medium.

Claim 30 (Previously Presented): The data processing apparatus as claimed in Claim 29, wherein:

said relational expression is an expression shown by the following equation:

$$S_{EXTENT}[byte] \geq \frac{T_{JUMP}[ms] \times R_{UD}[bps]}{1000 \times 8} \times \frac{TS\_recording\_rate[bps] \times 192}{R_{UD}[bps] \times 188 - TS\_recording\_rate[bps] \times 192},$$

setting that an allowable minimum data size of the data to be stored in the information recording medium is S_{EXTENT}, a total jump time is T_{JUMP}, a data read out rate from a disc in a drive is R_{ud}, and a data recording rate [RTS] is $TS_{recording\ rate}$.

Claim 31 (Currently Amended): A computer readable medium including computer executable instructions for executing a record data allocation determining processing on an information recording medium, said computer executable instructions causing a computer to execute:

a data size determining step of determining a data size as a minimum size of data to be stored in the information recording medium on the basis of allowable jump range information determined as an allowable range of at least an inter-layer jump processing in a playback processing of said information recording medium, the allowable range of the inter-layer jump being no more than 40,000 sectors, and the allowable range of the intra-layer jump being 1/10-stroke, a full stroke being equivalent to a range from an innermost side to an outermost side of the recording medium, and the 40,000 sectors being greater than the 1/10-stroke; and

a data allocation determining step of determining a data recording structure in which a data block having said data size is so allocated as to be playable in the jump processing within said allowable jump range.